Attorney Docket No. 6459.P68

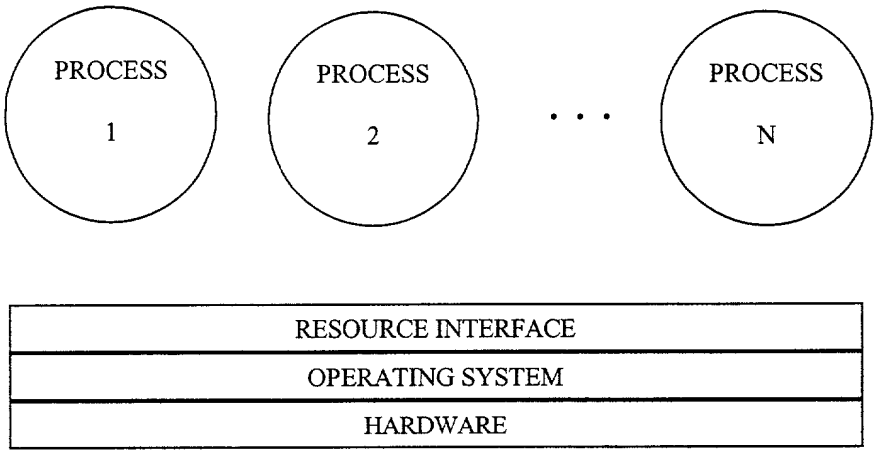


FIGURE 1

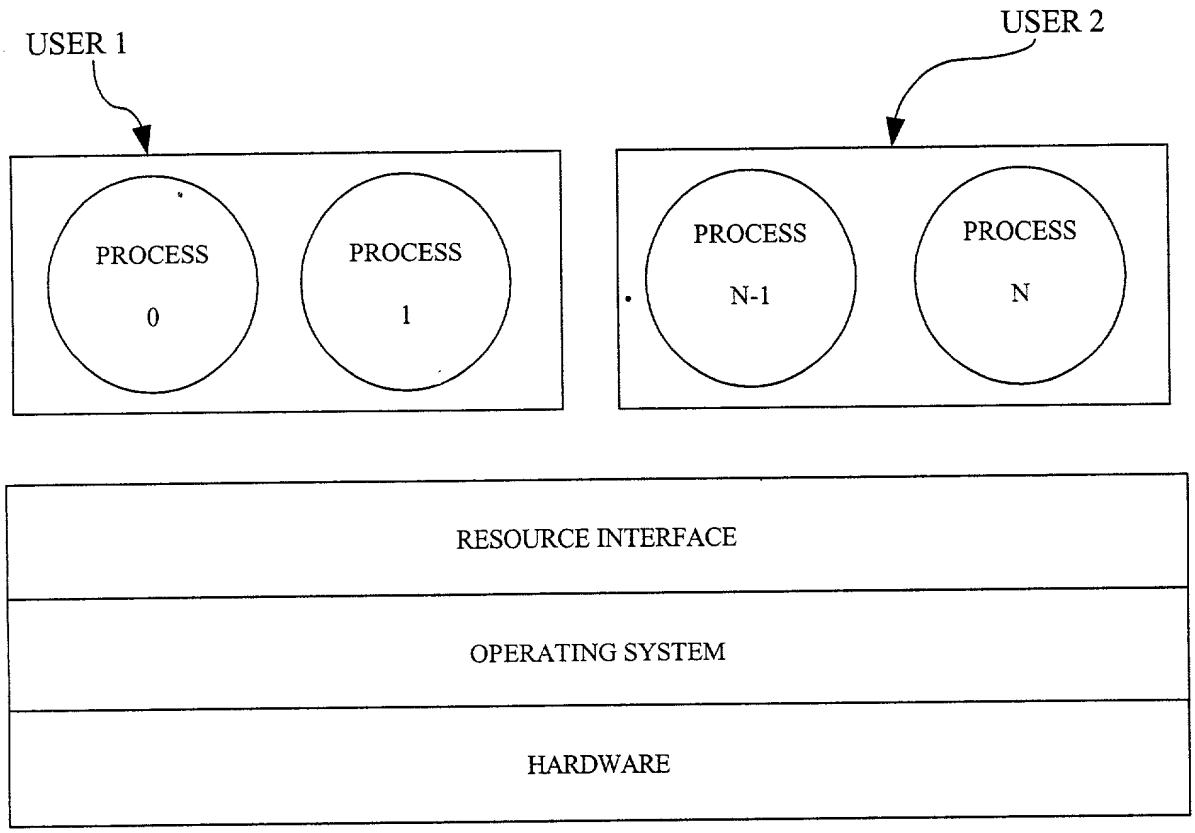

USER 1
USER 2
PROCESS 0
PROCESS 1
PROCESS N-1
PROCESS N
RESOURCE INTERFACE
OPERATING SYSTEM
HARDWARE

FIGURE 2

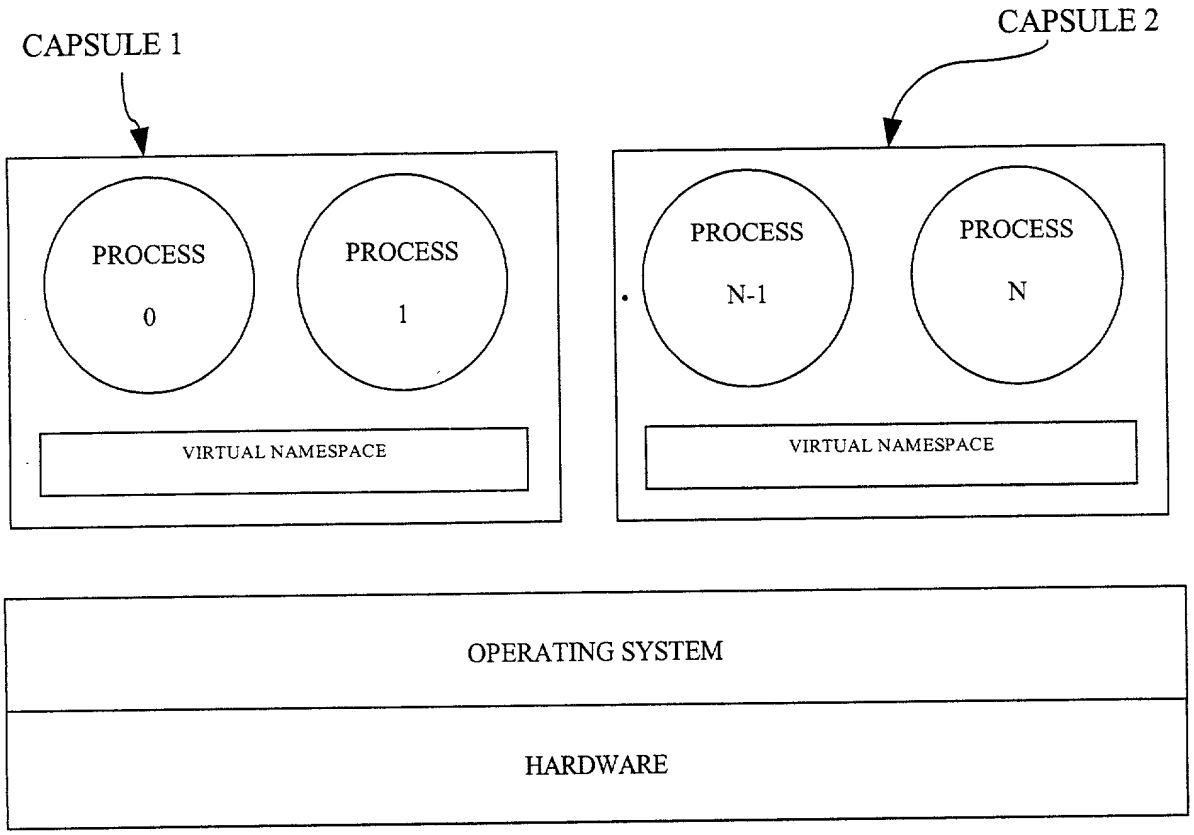

CAPSULE 1
CAPSULE 2
PROCESS 0
PROCESS 1
PROCESS N-1
PROCESS N
VIRTUAL NAMESPACE
VIRTUAL NAMESPACE
OPERATING SYSTEM
HARDWARE

FIGURE 3

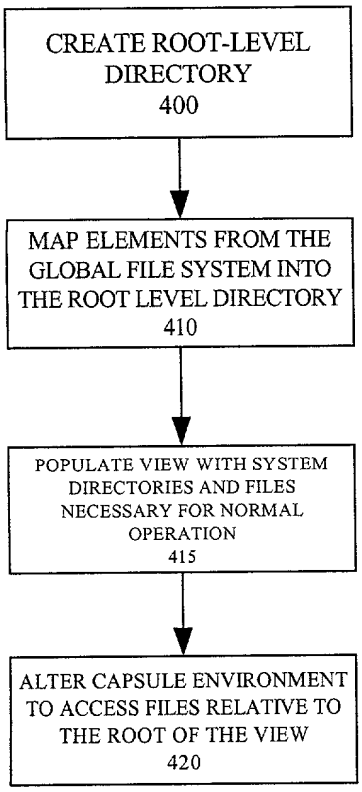

CREATE ROOT-LEVEL DIRECTORY
400
MAP ELEMENTS FROM THE GLOBAL FILE SYSTEM INTO THE ROOT LEVEL DIRECTORY
410
POPULATE VIEW WITH SYSTEM DIRECTORIES AND FILES NECESSARY FOR NORMAL OPERATION
415
ALTER CAPSULE ENVIRONMENT TO ACCESS FILES RELATIVE TO THE ROOT OF THE VIEW
420

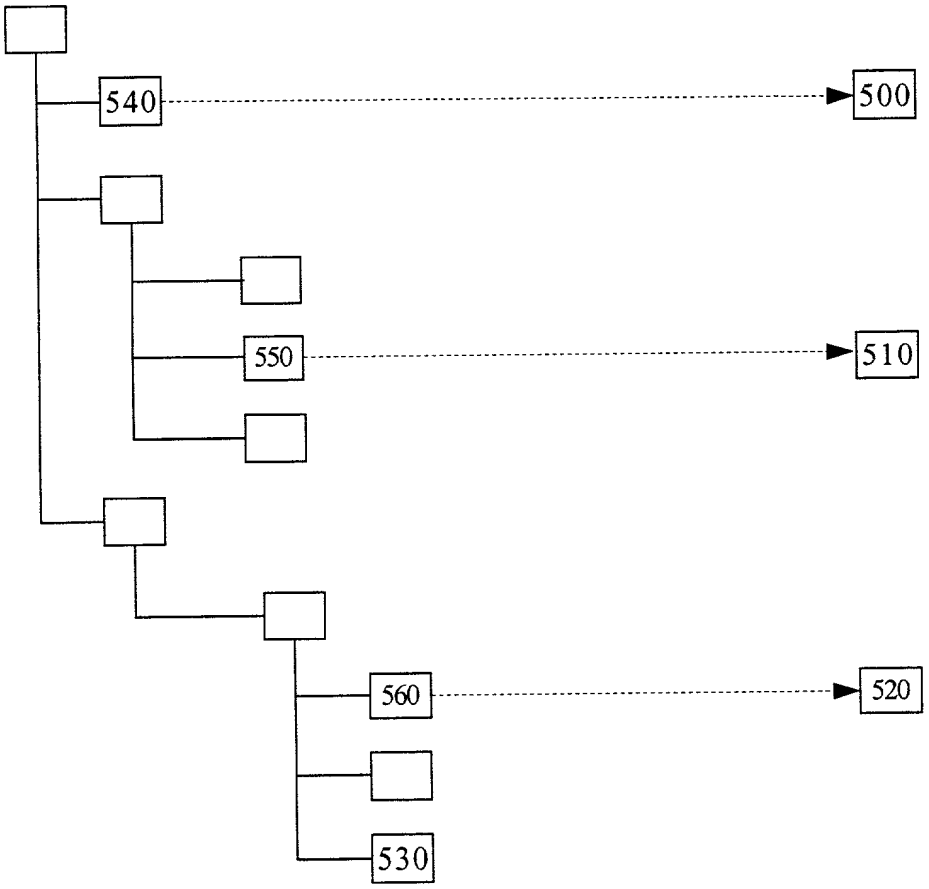
FIGURE 4

FIGURE 5

CAPSULE NAMESPACE CONTENTS

FILE SYSTEM NAMESPACE STRUCTURE

FILE CONTENTS



EMC-01-064/EMC-01-064.1

FIGURE 6

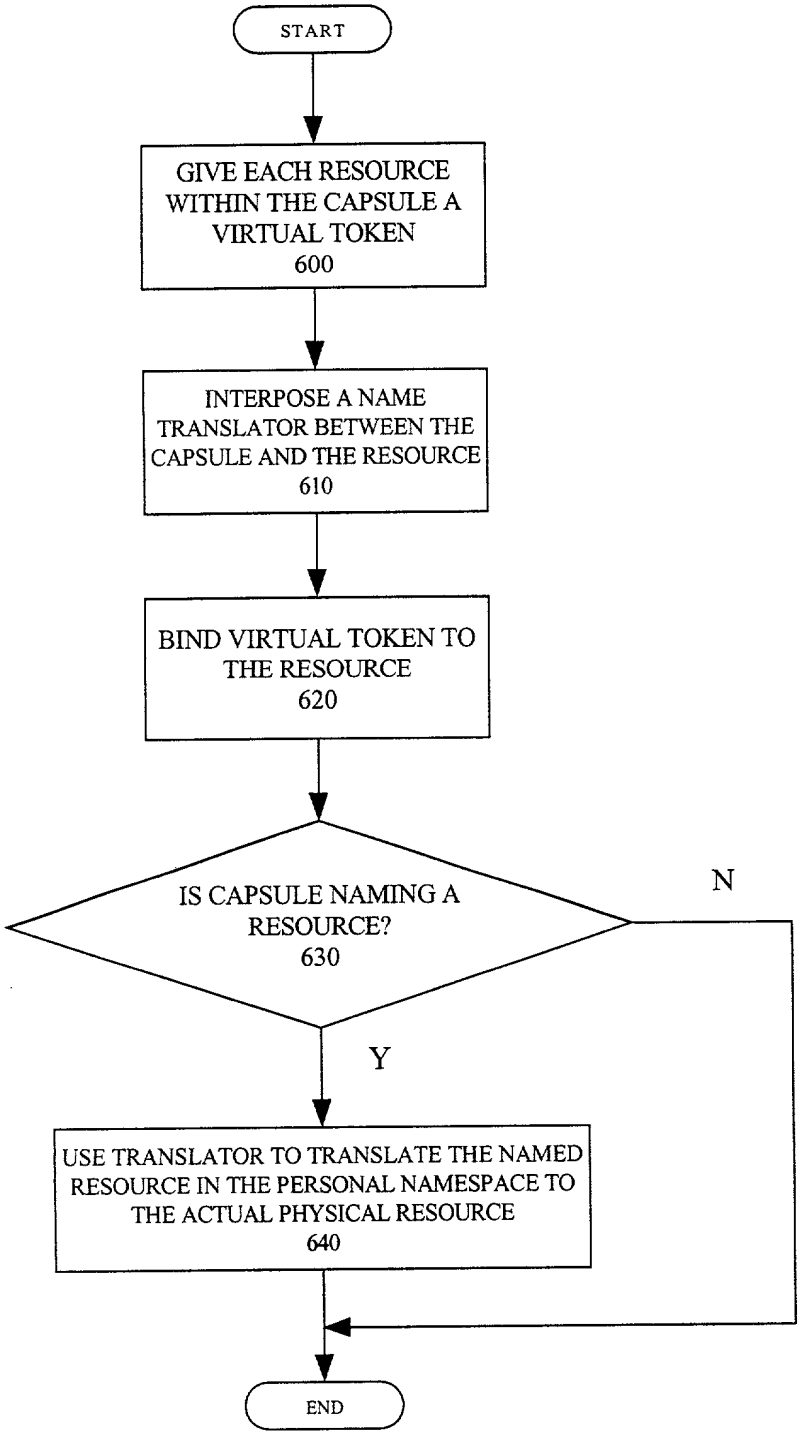
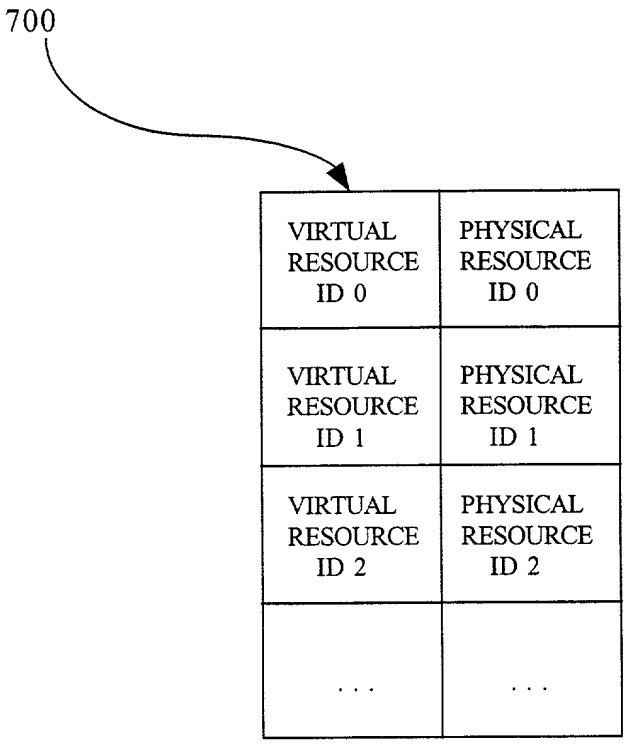

START
GIVE EACH RESOURCE WITHIN THE CAPSULE A VIRTUAL TOKEN
600
INTERPOSE A NAME TRANSLATOR BETWEEN THE CAPSULE AND THE RESOURCE
610
BIND VIRTUAL TOKEN TO THE RESOURCE
620
IS CAPSULE NAMING A RESOURCE?
630
N
Y
USE TRANSLATOR TO TRANSLATE THE NAMED RESOURCE IN THE PERSONAL NAMESPACE TO THE ACTUAL PHYSICAL RESOURCE
640
END

FIGURE 7


700
VIRTUAL RESOURCE ID 0
PHYSICAL RESOURCE ID 0
VIRTUAL RESOURCE ID 1
PHYSICAL RESOURCE ID 1
VIRTUAL RESOURCE ID 2
PHYSICAL RESOURCE ID 2
. . .
. . .

Express Mail No. EV339952643

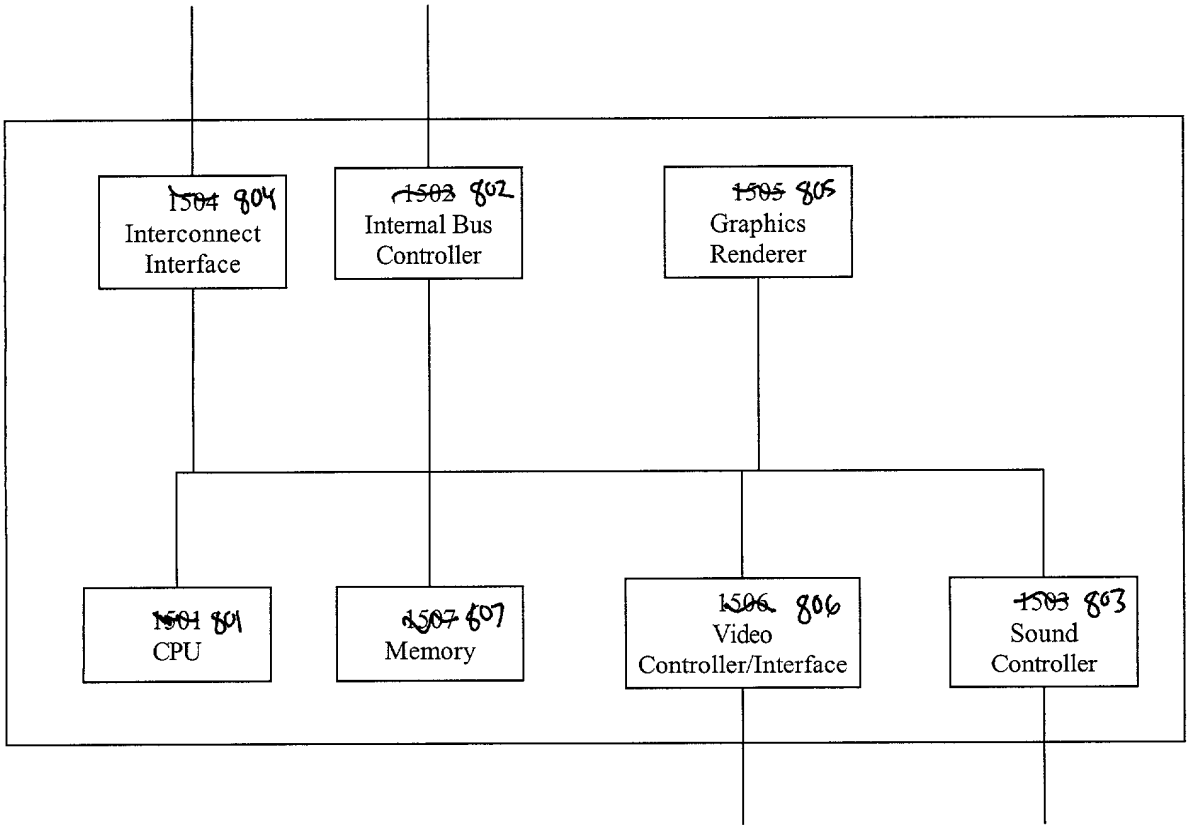
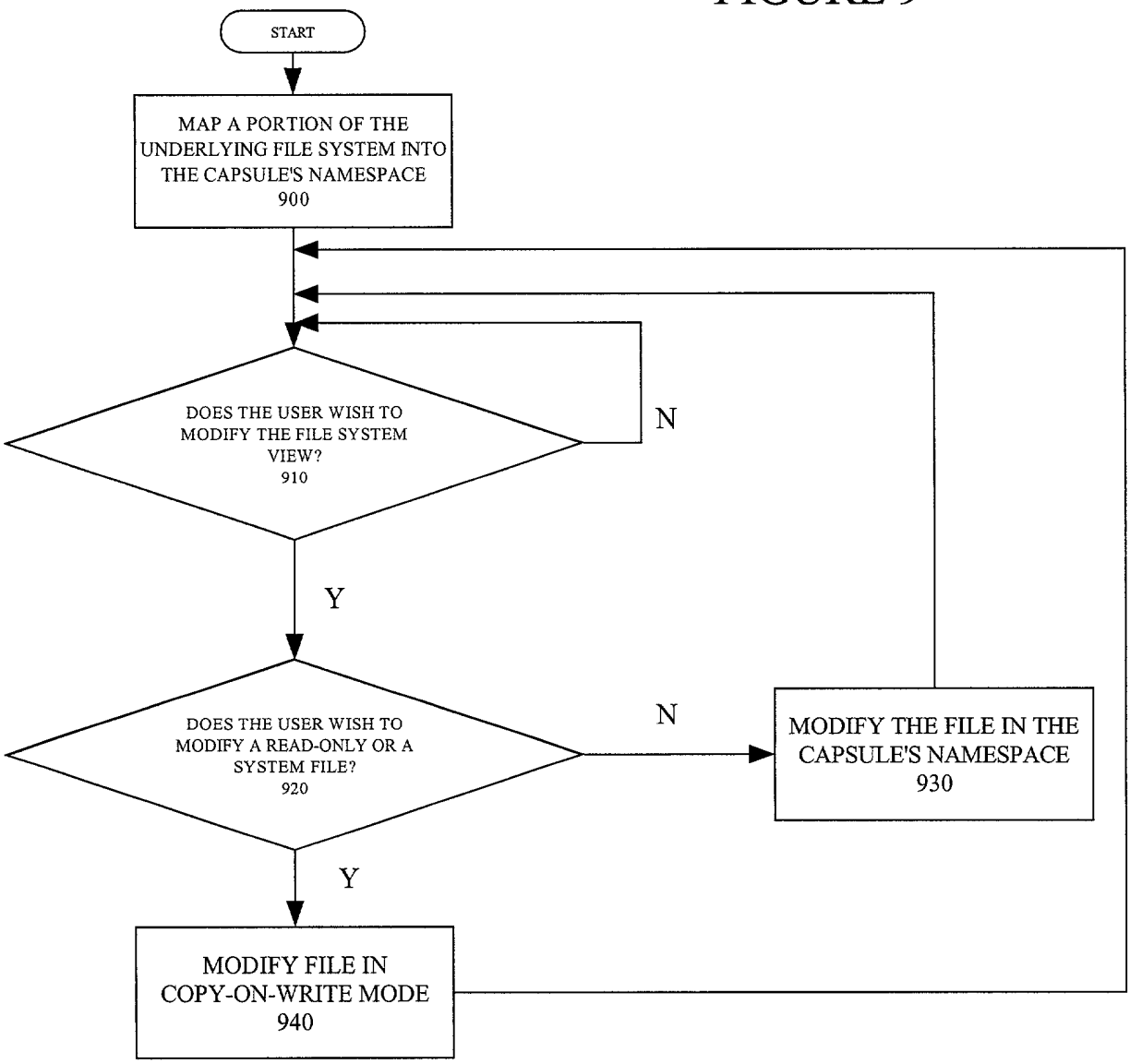


Figure 8: HID Single Chip Implementation

FIGURE 9


START
MAP A PORTION OF THE UNDERLYING FILE SYSTEM INTO THE CAPSULE'S NAMESPACE
900
DOES THE USER WISH TO MODIFY THE FILE SYSTEM VIEW?
910
N
Y
DOES THE USER WISH TO MODIFY A READ-ONLY OR A SYSTEM FILE?
920
N
MODIFY THE FILE IN THE CAPSULE'S NAMESPACE
930
Y
MODIFY FILE IN COPY-ON-WRITE MODE
940

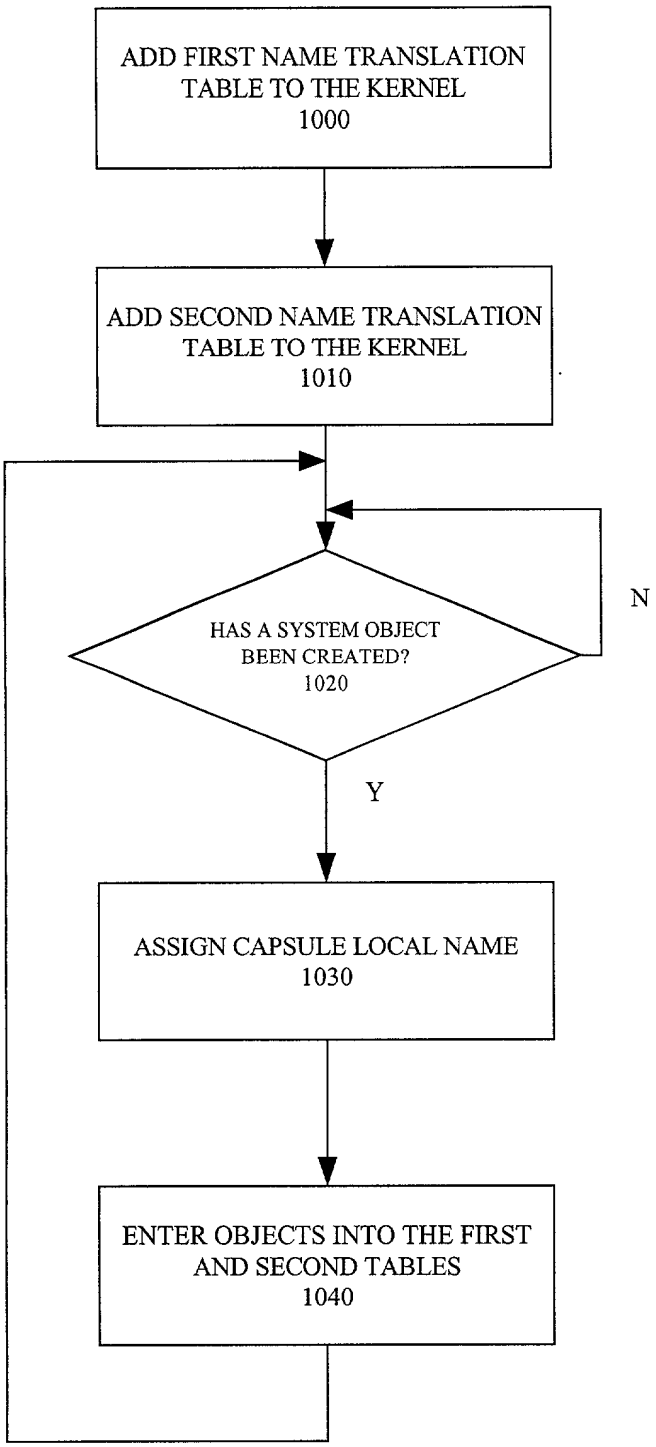

ADD FIRST NAME TRANSLATION TABLE TO THE KERNEL
1000
ADD SECOND NAME TRANSLATION TABLE TO THE KERNEL
1010
HAS A SYSTEM OBJECT BEEN CREATED?
1020
N
Y
ASSIGN CAPSULE LOCAL NAME
1030
ENTER OBJECTS INTO THE FIRST AND SECOND TABLES
1040

FIGURE 10

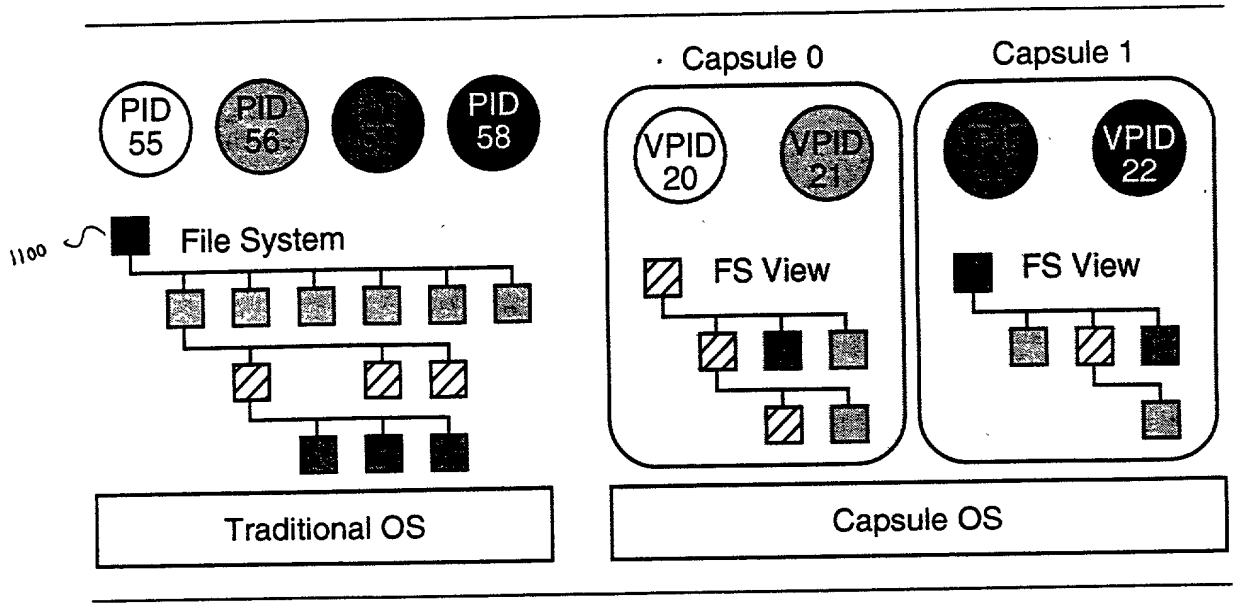


Figure 11

US 6,789,156 B1

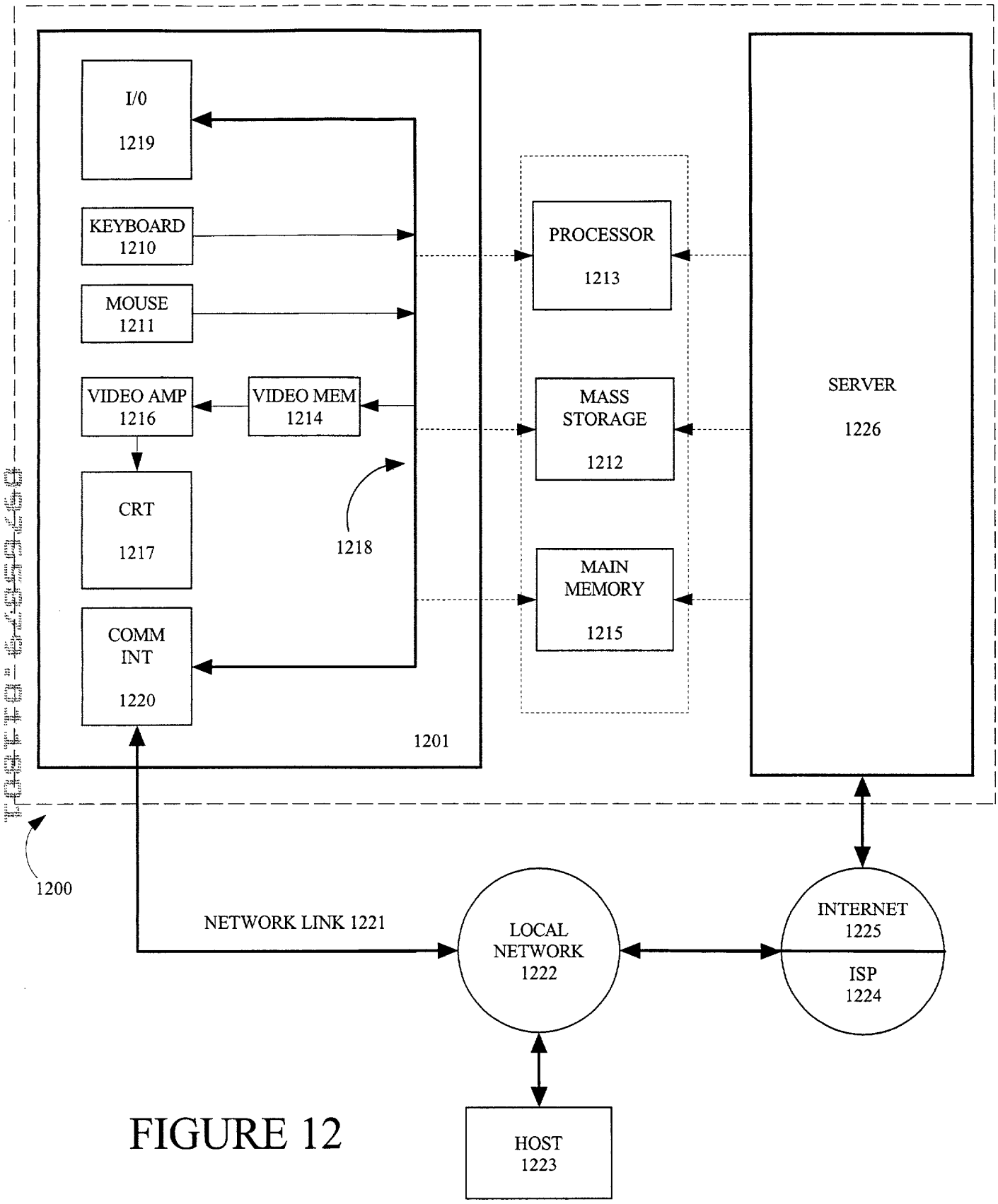

I/O
1219
KEYBOARD
1210
MOUSE
1211
VIDEO AMP
1216
VIDEO MEM
1214
CRT
1217
1218
COMM
INT
1220
1201
PROCESSOR
1213
MASS
STORAGE
1212
MAIN
MEMORY
1215
SERVER
1226
1200
NETWORK LINK 1221
LOCAL
NETWORK
1222
INTERNET
1225
ISP
1224
HOST
1223

FIGURE 12

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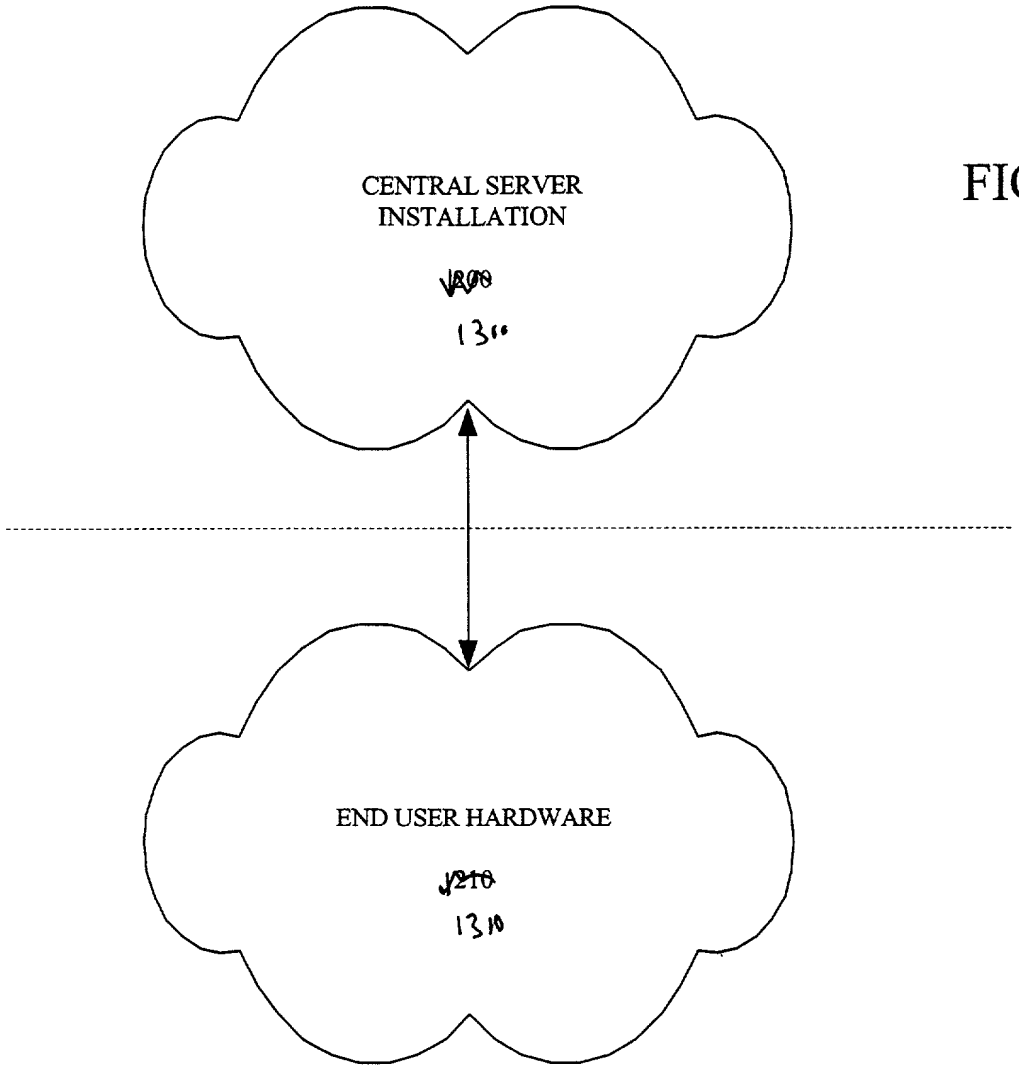

FIGURE ~~12~~ 13

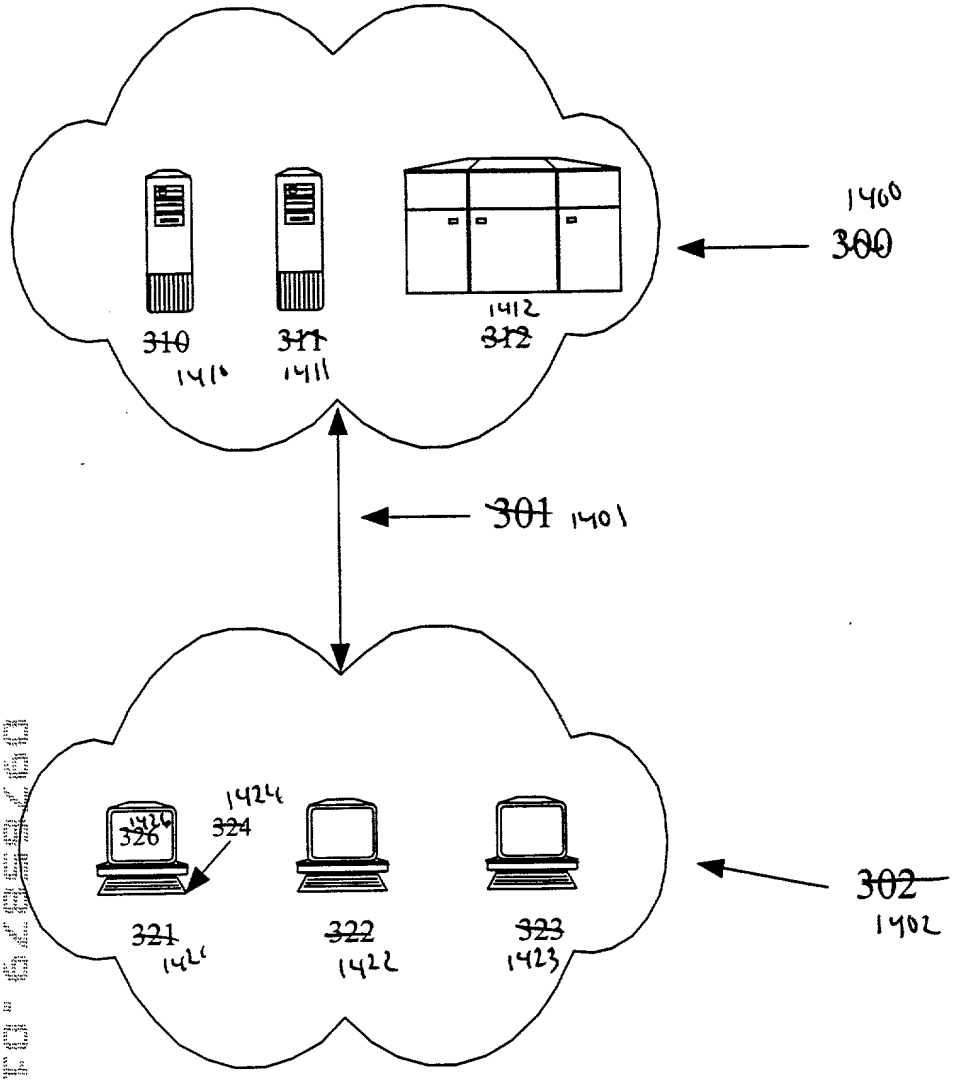
1460
300
1412
312
310
1410
311
1411
301
1401
1424
324
326
321
1421
322
1422
323
1423
302
1402

FIGURE 3 14

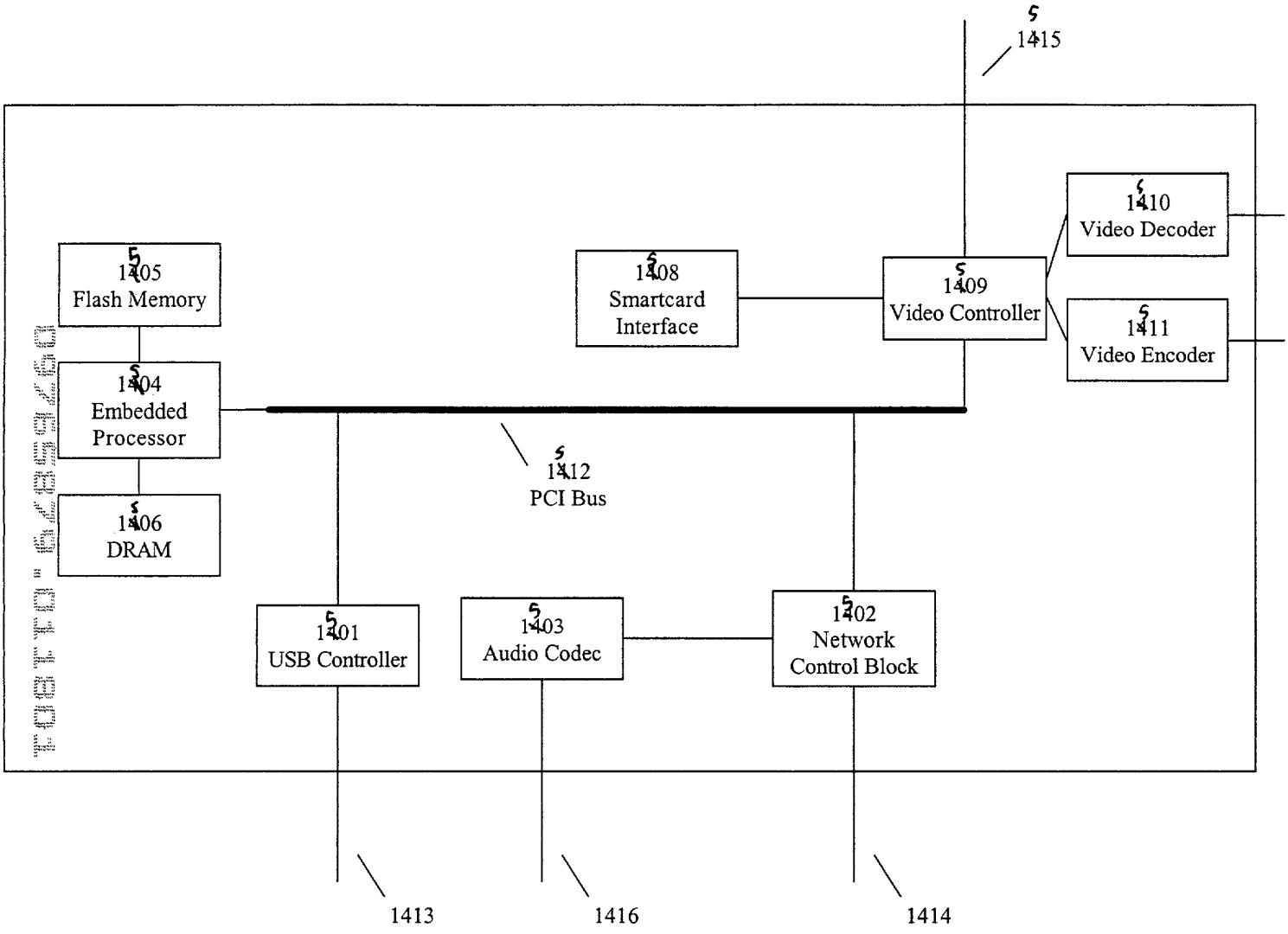

Figure 14: HID